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Environmental Terrorism: Analyzing the Concept*

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The term 'environmental terrorism' (or 'ecological terrorism') has found its way into North American politics, media, and academia. The concept of 'environmental terrorism', however, remains an ambiguous one. When is it appropriate to call environmental destruction 'environmental terrorism'? To date, the term 'environmental terrorism' has been misused by North American politicians, media, and academics alike. In this article, I devise a taxonomy that allows one to systematically discern the types of environmental destruction that can legitimately be labeled 'terrorism' and those that can be labeled 'environmental terrorism'. Environmental destruction or the threat thereof can be labeled 'terrorism' when: (1) the act or threat breaches national and/or international laws governing the disruption of the environment during peacetime or wartime; and (2) the act or threat exhibits the fundamental characteristics of terrorism (i.e. the act or threat of violence has specific objectives, and the violence is aimed at a symbolic target). An act of environmental destruction can be termed 'environmental terrorism' only when the two latter criteria are met, *and* when the environment is used by the perpetrator as an authentic symbol that instills fear in the larger population over the ecological consequences of the act.

Introduction

Following the launch of the Gulf War Coalition air campaign in January 1991, Iraqi forces intentionally caused two enormous oil spills in the Gulf waters. Two weeks later Iraqi leader Saddam Hussein ordered the detonation of an estimated 1250 oil wells. Nearly 600 oil wells were engulfed in flames, spewing out thick billows of smoke that 'turned midday into midnight in Kuwait' (Popkin, 1991: 23).

These events spawned international outrage and prompted the Administration of US President George Bush to accuse Iraq of 'environmental terrorism' (*Newsweek*, 4 February 1991: 36; *New York Times*, 26 January 1991a: 1–4). Subsequently, the term 'environmental terrorism' has been adopted into North American society. In academia, for example, the concept has garnered a good deal of attention: Lanier-Graham (1993) and Winnefeld & Morris (1994) have both argued that Hussein's actions amounted to 'environmental terrorism'; articles appearing in four North American university law journals have attempted to provide the legal basis for prosecuting acts of 'environmental terrorism' (Caggiano, 1993; Edgerton, 1992; Low & Hodgkinson, 1994; Oxman, 1991); an international conference on 'Criminal Sanctions in the Protection of the Environment', sponsored jointly by the University of British Columbia and the United Nations, noted that 'environmental terrorism' is a legitimate threat to international security;[1] and The Inter-University

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[1] Information from the 'International Meeting of Experts on the use of Criminal Sanctions in the Protection of the Environment' can be found at <http://www.law.ubc.ca/centres/icclr/papers/environ.txt>, viewed 6 June 1997.

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Centre for Terrorism Studies has identified 'environmental terrorism' as one of their primary foci for future research.[2]

The North American media have also picked up on the term. Mainstream press sources such as the *New York Times* and *Newsweek* implicitly endorsed the term by using it to describe Hussein's actions in the Gulf War (*Newsweek,* 4 February 1991: 36–39; *New York Times,* 26 January 1991: 1). Alternative sources, such as the *EPA Journal* and the *Congressional Quarterly Weekly Report,* also endorsed the term in a similar fashion, although at least one article appearing in the journal *International Wildlife* briefly questioned the validity of the concept (Emerson, 1991: 38–41; Popkin, 1991: 23–26; Towell, 1991: 302).

In political circles, lower levels of the US government have followed the Bush Administration's lead in labeling Hussein an 'environmental terrorist'. The US Senate Committee on Environment and Public Works came to this conclusion in a 1992 Gulf Pollution Task Force report (Committee on Environment and Public Works, 1992). And the Deputy Under-Secretary of Defense for Environmental Security – a position created by US President Bill Clinton – has stated that 'environmental terrorism' is a 'legitimate threat' to US security.[3]

Unfortunately, the term has been embraced by North American society without a rigorous examination of the concept. In this paper, I examine the validity of labeling Iraq's actions in the Gulf War as 'environmental terrorism'. This analysis forms part of a larger exploration of the notion of 'environmental terrorism' in both peacetime and wartime. I argue that, to date, the term 'environmental terrorism' has been misused and misapplied by politicians, media, and academics alike – sometimes for political or rhetorical purposes, and sometimes for sheer lack of clarification of the term. I demonstrate that what has been popularly coined 'environmental terrorism' is in fact merely an offshoot of a more conventional breed of terrorism in which humans or human constructs, and sometimes the natural environment, are the symbolic target of terrorist attacks.[4] I show that although terrorists sometimes use the natural environment as a symbolic target, a distinction must be made between acts of terrorism in which the use of the environment is merely incidental (e.g. when pipelines or dams are targeted), and acts of terrorism in which the terrorist is explicitly attempting to create concern over the environment. My central conclusion is that the term 'environmental terrorism' should be reserved for incidents in which the environment itself is disrupted or threatened by the perpetrator as a symbol that elicits trepidation in the larger population over the ecological consequences of the act.

By clarifying the concept of 'environmental terrorism', I hope to avert further ambiguities within North America and prevent the misuse of this term internationally. This will enable policy-makers to engage in a more accurate and informed discussion of the topic.

The terms *environment, natural environment,* and *ecology* are used interchangeably for purposes of this article. All three refer to 'interactions of all biotic and non-human

[2] The Inter-University Center for Terrorism Studies (ICTS) can be reached at <http://www.gwu.edu/~terror/intunctr.html>, viewed 2 June 1997.

[3] Taken from two speeches given by the Deputy Under Secretary of Defense for Environmental Security. These speeches came from the following web site: <http://128.174.5.51/denix/Public/ES-programs/Speeches/speech-03.html>, viewed 4 June 1997. The position is also stated in the Department of National Defense's Security Strategy, part of which can be found at <http://www.tradoc.monroe.army.mil/irac/gao/reports/text/ns94142.txt>, viewed 3 June 1997.

[4] Note that the term 'environmental terrorism' has also been used to describe reprisals taken by animal rights activists against those who engage in animal experimentation. For a further discussion on this topic see Helvarg (1994); and Vetter & Perlstein (1991: 63).

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abiotic entities and properties'.[5] The term 'environmental destruction' is meant to refer to the 'disruption of the environment through premeditated or inadvertent action'.

In the second section, I will attempt to establish the validity of studying 'environmental terrorism'. The defining characteristics of terrorism are discussed in the next section, and a definition of terrorism is provided. I then go on to discuss the connections between terrorism and war, and establish that acts or terrorism can occur during wartime. In the following section, I build the foundation for a taxonomy of environmental destruction (as it pertains to terrorism). This taxonomy is then laid out with a selection of examples provided for each category. In the penultimate section, I apply the taxonomy to the definition of terrorism provided in the second section, in order to determine systematically the types of environmental destruction that can be labeled 'terrorism' and the types that can be labeled 'environmental terrorism'. Finally, the last section offers a brief summary and an analysis on the use and misuse of the term 'environmental terrorism'.

The Varieties of Terrorism

The concept of terrorism offers a multiplicity of focal points. The emphasis depends on one's research interests. For example, one burgeoning field of terrorist study that has emerged in the last decade is that of 'narcoterrorism'. Narcoterrorism is defined as '... the attempts of narcotics traffickers to influence the policies of government by the systematic threat or use of violence' (Smith, 1991: 1). Hence, the emphasis in the study of narcoterrorism is on particular actors and their unique motives.

The study of 'environmental terrorism' may be justified in a similar fashion. It is valid because it concentrates on a particular aspect of terrorism. The focal point in the study of 'environmental terrorism' is on a specific target of the terrorist's violence: namely the environment.

Moreover, this topic is of particular importance because the environment as a target has significant implications for the well-being of the ecology. Unlike the situation for most victims of terrorism, the physical harm from environmental terrorism is not confined to direct effects of the act of violence itself. When ecological destruction occurs, the interconnectedness of the environment insures that harm to the environment extends beyond the act. The specter of threshold effects and chaotic reactions in the environment inflate the salience of this topic (Broecker, 1986). Historian Walter Laqueur writes of 'the futility of terrorism' and argues that 'compared with other dangers threatening mankind, it is almost irrelevant'.[6] The prospect of 'environmental terrorism' bridges the gap: terrorist acts that destroy the environment *constitute* one of these 'other dangers threatening [hu]mankind'.

Defining Terrorism

Concordance on the definition of 'terrorism' has proven elusive for scholars. Academics have long been grappling with the term (Anderson & Sloan, 1995; Narang, 1990: 13–24; Schecterman & Slann, 1993; Shafritz et al., 1991). Emotional responses evoked by the imagery of terrorism hinder detached assessments of the causes, dynamics, and outcomes of terrorism (Anderson, 1995: 1).

The most sophisticated and lucid definitions of terrorism stress two elements: (1) the objectives of terrorism, and (2) the

[5] This definition excludes humans, because to include humans would make 'terrorism' a subset of 'environmental terrorism' – which is not the intent of this article.

[6] Historian Walter Laqueur as quoted (without citation) in Norton & Greenberg (1979: xvii).

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means/methods of terrorism. The objectives of terrorism are always to influence some governmental or other human policy or course of action. Thus, for example, violent acts of insanity could not be considered terrorism, because this form of violence does not have a particular objective.

The means/methods of terrorism always include the use, or threat of use, of violence. Thus, non-violent acts, such as acts of civil disobedience, could not be considered terrorism.

Most importantly, the means/methods of terrorism always involve violence that is directed at a symbolic target (which usually suggests in itself that there is an objective to the act or threat). While terrorists often target humans or human constructs (e.g. government buildings), the natural environment can also serve as a target. The use, or threat of use, of violence itself may not influence a human course of action. Rather, it is the fear that this symbolic act or threat creates in the larger population which is the primary factor distinguishing terrorism from other forms of violence. Thus, non-symbolic acts of violence such as the wanton destruction of property could not be labeled terrorism.

An example of a comprehensive definition of terrorism that contains these elements comes from Wardlaw:

> ... the use, or threat of use, of violence by an individual or group, whether acting for or in opposition to established authority, when such action is designed to create extreme anxiety and/or fear-inducing effects in a target group larger than the immediate victims with the purpose of coercing that group into acceding to the political demands of the perpetrators. (Wardlaw 1989: 16)[7]

This definition will guide this discussion on environmental terrorism. For purposes of this paper, a 'terrorist' is any person who commits an act of terrorism as this is defined above.

Terrorism and War

While the above definition distinguishes terrorism from most other forms of violence, some analysts stress that acts of terrorism cannot be distinguished from acts of war. These analysts argue that no act of violence executed during wartime can be deemed terrorism, because any such act is considered either a legitimate or illegitimate act of war (Crenshaw, 1978; Kupperman & Trent, 1975: 19). While the boundaries between acts of war and acts of terrorism are sometimes blurred – most notably with regard to guerrilla warfare – it is my contention that significant differences exist between these two types of violence; and acts or terrorism can, and do, occur during wartime.

There are many laws that govern international warfare. The humanitarian laws that do so – in particular the Geneva Conventions of 1949 and the additions to these conventions – are primarily concerned with ensuring that fighting is restricted to combatants, and that prisoners of war and civilians are protected from unwarranted attack.[8] Furthermore, the laws of war are meant to ensure that the use of violence is restricted to acts that create, or attempt to create, an immediate militarily strategic advantage for the attacker (Combs, 1997: 154–156; Fleck, 1995: 155–162; Schecterman & Slann, 1993: 8). Acts of international war can be distinguished from acts of terrorism, because the latter use of violence is always indiscriminate; and the act of terrorism, because it is directed at a

[7] Although this definition does not mention the criminal nature of the act, it is assumed that all terrorist acts breach national and/or international laws, whether during peacetime or during wartime. See Schmid & Jongman (1988); and United Nations (1994: 4).

[8] Convention Relative to the Protection of Civilian Purposes in Time of War, UST 3516, TIAS No. 3365, 75, UNTS 287 (1949); see, for example, Fleck (1995: 81, 88) for prisoner of war laws.

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symbolic target, does not create an immediate military advantage for the attacker.

With the thaw of the Cold War, the world has witnessed a dramatic shift from the international to the intranational, or internal, war. Internal wars – such as those recently fought in Somalia, Nicaragua and Mozambique – pose new difficulties for the study of terrorism. There do exist international laws of warfare that govern this type of conflict. The 1977 Additional Protocol II to the 1949 Geneva Conventions, for example, deals exclusively with 'non-international' war, and Article 1(4) of Protocol I to the 1949 Geneva Conventions makes the laws of international armed conflict applicable to 'armed conflicts in which peoples are fighting against colonial domination and alien occupation and against racist regimes in the exercise of the right of self determination...' (Levie, 1979: 62). But guerrilla warfare (or insurrectionary armed protest), which is a common feature of internal wars, is difficult to distinguish from terrorism (Fleck, 1995: 47–49; Vetter & Perlstein, 1991: 195). Nonetheless, it can be argued that acts of guerrilla warfare that: (1) do not target military personnel or military installations; (2) do not abide by the laws of guerrilla warfare set out by the 1977 Geneva Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts; and (3) that conform to the other characteristics of terrorism discussed above, can be reasonably labeled terrorism (Combs, 1997: 10–11).[9]

Although some analysts prefer to label acts of violence that occur during wartime as either legitimate or illegitimate acts of war (the latter being either breaches or gross breaches of the laws of war), I contend that it is pertinent to label certain illegitimate acts of war as terrorism.[10] Indeed, Article 46 of Protocol I to the 1949 Geneva Conventions states that 'Acts or threats of violence which have the primary object of spreading terror among the civilian population are prohibited' (Combs, 1997: 154–155).[11]

The notion that acts of terrorism can occur during wartime will have an important bearing on the discussion of environmental terrorism below, because it follows that if acts of environmental destruction can be classified as terrorism or 'environmental terrorism', then they can be classified as such during wartime as well as during peacetime.

Terrorism and Environmental Destruction

Before attempting to determine whether or not there is something that can be called 'environmental terrorism', we will need to construct a taxonomy of the various candidates of 'environmental destruction' that might fit under the rubric 'terrorism'.

From the definition of terrorism given above, we can identify three defining characteristics that are essential to distinguishing one type of 'environmental destruction' from another (with regard to terrorism): (1) deliberate versus unintentional environmental destruction, (2) symbolic versus

[9] I would, for example, consider many violent actions undertaken by the Irish Republican Army (IRA) and Peru's Shining Path to be acts of terrorism. For the international rules governing guerrilla warfare see Fleck (1995: 77–79).

[10] I am by no means the first to argue this point – see for example, Combs (1997: 151–156); Schmid & Jongman (1988: 13–18); and Netanyahu (1986: 9–10). The act of terrorism may be a breach or a gross breach of the law(s) governing warfare.

[11] See Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflict (Protocol I). Note that terrorist acts are not only committed by clandestine organizations associated with terrorism, but can also be committed by states. (For further discussion, see *The Economist*, 2 March 1996: 24.) Note also that regardless of the type of war being waged – international or internal – the application of international humanitarian law is not dependent on a formal declaration of war. In fact, declarations of war have become almost unknown since 1945 (Fleck, 1995: 43–44; Levie, 1993: 5).

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non-symbolic environmental destruction, and (3) environmental destruction that occurs during wartime versus peacetime destruction.

The distinction between deliberate acts or threats of environmental destruction and unintentional acts of environmental destruction is essential, because it is necessary to determine whether or not inadvertent damage to the environment can be considered terrorism. A deliberate act or threat of environmental destruction, for purposes of this argument, would entail that the perpetrator could reasonably expect the damage to occur.

The second distinction is between acts or threats of environmental destruction that are symbolic and those that are not. This distinction is crucial because it is necessary to determine whether wanton and purposeless environmental damage, or threats thereof, can be considered terrorism.

The distinction with regards to symbolism, however, must be refined further. I distinguish between acts or threats of environmental destruction that are of 'primary symbolism' and those that are of 'secondary symbolism'. 'Primary symbolism' refers to the manipulation of the environment in a bid to instill trepidation in the larger population over the ecological consequences of the act. In this scenario, the environment is a *victim.* 'Secondary symbolism' refers to the manipulation of the environment, whereby the act or threat itself is intended to coerce a larger population than those immediately effected, but wherein the perpetrator is not attempting to create fear over the ecological consequences of the act.[12] In this scenario, the environment is a *casualty* rather than a *victim.*[13]

The distinction between wartime and peacetime is essential because different laws apply to environmental destruction that occurs during times of war than that which occurs during times of peace. In order for an act of environmental destruction to be labeled terrorism, it must breach the laws of peace or war (whichever may apply in a given circumstance); and it must conform to the other characteristics identified in the definition of terrorism above. Table I lists the relevant multilateral treaties, international declarations and codes constraining disruption of the environment during wartime. Peacetime laws governing the disruption of the environment include any relevant national laws legislated by individual countries (e.g. a national law governing endangered species), as well as multilateral treaties and conventions, such as the 1976 Peaceful Nuclear Explosions Treaty, the 1982 Law of the Sea Convention.[14]

A Taxonomy of Environmental Destruction

Given the three distinctions discussed above, a taxonomy consisting of eight categories can be formed for 'types of environmental destruction that may be considered terrorism'.[15] All types of environmental destruction can be categorized in one of these eight categories (listed in Table II).

Category 1. Deliberate, 'Primary Symbolism', Peacetime

The first category consists of those acts or threats of environmental destruction that are deliberate, occur during times of peace, and that are symbolic in the sense that the

[12] This distinction may potentially be blurred by one's conception of the natural environment. For purposes of this paper, refer to the definition specified in the introduction.

[13] When the act of environmental destruction is non-symbolic, the environment becomes a *non-symbolic casualty.*

[14] For a detailed list of relevant international treaties and conventions that govern the environment during peacetime, see Burhenne & Robinson (1996).

[15] Although the combinations and permutations suggest that more than eight categories be formed, two of these categories are eliminated: (1) unintentional, symbolic, and peacetime, and (2) unintentional, symbolic, and wartime. This is because it is not possible for an action to be simultaneously unintentional and symbolic.

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Table I. Multilateral Treaties, International Declarations and Codes, Constraining Disruption of the Enviromenment during Wartime

Multilateral Treaties
The Hague Convention II with respect to the Laws and Customs of War on Land, 1899
The Hague Convention IV respecting the Laws of Customs of War on Land, 1907
Geneva Protocol on Chemical and Bacteriological Warfare, 1925
Antarctic Treaty, 1959
Partial Test Ban Treaty, 1963
Outer Space Treaty, 1967
Nuclear-weapon Non-proliferation Treaty, 1968
Seabed Treaty, 1971
Bacteriological and Toxin Weapon Convention, 1972
World Heritage Convention, 1972
Environmental Modification Convention (ENMOD), 1977
Bern [Geneva] Protocol I on the Protection of Victims of International Armed Conflict, 1977
Bern [Geneva] Protocol II on the Protection of Victims of Non-international Armed Conflicts, 1977
Moon Agreement, 1977
Inhumane Weapon Convention, 1981
International Declarations
Declaration of the Human Environment, 1972
World Charter for Nature, 1982
Codes
Biblical Law, ca. 7th century BC
Soviet Physicians' Oath, 1983
Code of Ethics for Scientists, 1984
US Scientists' and Engineers' Statement on Star Wars, 1985

Source: Westing (1988: 163–171)

Table II. A Taxonomy of Environmental Destruction

Category 1. Deliberate, 'primary symbolism', peacetime
e.g. 'Galapagos Islands incident'
Category 2. Deliberate, 'primary symbolism', wartime
e.g. no current examples
Category 3. Deliberate, 'secondary symbolism', peacetime
e.g. manipulation of chemical and biological agents
Category 4. Deliberate, 'secondary symbolism', wartime
e.g. oil spill and oil well sabotage during Gulf War
Category 5. Deliberate, not symbolic, peacetime
e.g. nuclear testing by France in the Pacific Ocean
Category 6. Deliberate, not symbolic, wartime
e.g. 'ecocide' (Vietnam War)
Category 7. Unintentional, not symbolic, peacetime
e.g. nuclear accidents (Chernobyl)
Category 8. Unintentional, not symbolic, wartime
e.g. collateral effects of conventional warfare

disruption of the environment occurs or is threatened for the purpose of inducing anxiety over the ecological consequences of the act.

There is only one current example of such a phenomenon. In January 1995, a small group of armed fishermen took over the Darwin Research Station in the Galapagos

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Islands, Ecuador. The fishermen – irate over a recently imposed limit on sea-cucumber harvesting (a highly lucrative trade, recently discovered by local fisherman) – held the station workers hostage and threatened to kill several rare and endangered species of tortoises, including the last known survivor of a Pinta Island sub-species. Although the Ecuadorian marines recaptured the station without loss of human life, it was later discovered that 81 Galapagos Island tortoises had been killed – mostly by way of torture, mutilation, and hanging (Casey, 1996: D6).

In this case, the environment was a *victim* (rather than a *casualty*), because the tortoises were threatened and killed by the local fisherman in order to instill fear in the larger audience over the ecological consequences of their act.

Category 2. Deliberate, 'Primary Symbolism', Wartime

The second category consists of acts or threats of environmental destruction that are identical to category 1, but that occur during times of war. As noted above, the distinction between war and peace is essential because of the different laws governing the use of the environment. No current examples of such action exists.

Category 3. Deliberate, 'Secondary Symbolism', Peacetime

The third category consists of those acts or threats of environmental destruction that are deliberate, occur during times of peace, and that are symbolic in the sense that the acts or threats themselves are intended to coerce a larger population than those immediately affected, but are not primarily intended to produce fear over the ecological consequences of the act.

There are two prominent examples which may apply to this category: (1) the act or threat of manipulating nuclear materials; and (2) the act or threat of manipulating biological and chemical agents. The manipulation of nuclear material constitutes a deliberate act or threat of environmental destruction, because the terrorist could reasonably foresee the repercussions of such a mammoth exploit. Indeed, Barnaby (1992: 55) notes that terrorists have avoided use or threat of manipulating nuclear materials because 'they have until now decided that killing, or threatening to kill large numbers of people indiscriminately, and/or contaminating large areas, would not further their ends'. Although no terrorist action has yet to produce a significant nuclear calamity, there have been numerous near misses and dozens of warnings issued by terrorists (Barnaby, 1992; Norton & Greenberg, 1979).

The manipulation of biological and chemical agents also constitutes deliberate acts or threats of environmental destruction that are of 'secondary symbolism'. Bailey (1995) contends that the use of chemical and biological weapons by terrorists is a legitimate concern. A notable recent example is the use of nerve gas in Tokyo subway stations by Japan's Aum Shinrikyo religious cult.

In both scenarios above, however, the environment would be a *casualty* rather than a *victim*, because the perpetrators would not be attempting to instill fear in the larger population over the ecological consequences of their acts.

Category 4. Deliberate, 'Secondary Symbolism', Wartime

The fourth category consists of those types of environmental destruction that occur, or are threatened to occur, during times of war, and that are deliberate and of 'secondary symbolism'. A prominent example of such a phenomenon occurred during the Gulf War of 1990.

That Iraq's act of environmental destruction was deliberate and that it occurred during a time of war are undisputed. What is

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more contentious, is whether or not the act was of 'primary symbolism', 'secondary symbolism', or not symbolic at all. Did Saddam Hussein commit a wanton and purposeless act? Did he have a militarily strategic motive? Or did the act represent premeditated ecological coercion?

Although Hussein's environmental destruction has often been characterized in the North American press as a fruitless act committed by a desperate and malicious despot, some analysts suspect that the act was borne out of military strategy (e.g. the smoke created by the fires would impede the vision of allied bombers) (Emerson, 1991: 38; *Newsweek*, 4 February 1991: 37). The Allies, however, officially repudiate the claim that the act was carried out for militarily strategic purposes (Committee on Environment and Public Works, 1992: VI). They maintain that Hussein was simply following through on a threat he made to spite the international community.

The facts appear to support the Allied claim. Prior to the arrival of American troops in September of 1990, Hussein had threatened to blow up the oil wells if his presence in Kuwait was challenged (Lanier-Graham, 1993: 44). Mines were strategically placed in order to maximize damage (Winnefeld & Morris, 1994: 42). In some instances, antipersonnel mines were placed around the wells in order to deter fire-fighting efforts (Lanier-Graham, 1993: 44). The US Senate Gulf Pollution Task Force (1992: VI) determined that 'Iraq's actions [both the oil spills and the oil well fires] ... were not supportable by military necessity'. An international conference, 'On the Use of the Environment as a Tool of Conventional Warfare', reached a similar conclusion (Committee on Environment and Public Works Gulf Pollution Task Force, 1992: VII).

Iraq's environmental destruction, then, would appear to have been a symbolic gesture. Given this conclusion, their act could theoretically be found to violate certain acts of war that govern the disruption of the environment. For example, if the environmental damage were determined to be 'widespread, long-lasting, and severe', and if Protocol I of 1977 to the 1976 Convention on the Prohibition of Military or Any Other Hostile use of Environmental Modification Techniques (ENMOD) had been effective between the Parties to the 1990–91 Gulf Crisis, then Iraq may have been found guilty of breaching this law of war (Goldblat, 1991: 400; Levie, 1993: 299).

Hussein's act of ecological destruction, however, could not be considered one of 'primary symbolism'. Contrary to what Lanier-Graham (1993: 45) asserts, the Iraqi leader never issued an ecological threat and never 'held the environment hostage'. By wasting and destroying thousands of tons of oil Hussein was simply stating that if his nation could not reap the financial benefits of the oil, no one else would (Leggett, 1992: 68). Hussein was symbolically destroying *wealth*, not the environment. Hussein's act then, was one of 'secondary symbolism'.

Category 5. Deliberate, Not Symbolic, Peacetime

The fifth category consists of those acts or threats of environmental destruction that are deliberate and occur during peacetime, but that are not symbolic.

This category could include wanton and purposeless acts of vandalism that are ecologically destructive. This category could also include wartime preparations by nations. France's testing of nuclear devices in the Pacific Ocean constitutes a recent example.

Category 6. Deliberate, Not Symbolic, Wartime

The next category consists of those acts or threats of environmental destruction that are deliberate and occur during times of war, but that are strategic rather than symbolic.

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The use of environmental destruction as a tactic of war is not a recent phenomenon. For example, Entemenar, ruler of Sumer in 2400 BC, had a canal dug to divert waters from the Tigris to the Euphrates watershed, thus making the country independent of the water supply from the rival kingdom of Umma. The resultant rise in groundwater level in the desert soils caused rapid salinization of the border lands, impoverishing Umma and rendering it impotent as a military power (Roots, 1992: 13).

The term 'ecocide' was coined nearly two decades ago to refer to this type of environmental destruction in war (Teclaff, 1994: 933). The employment of a 'scorched earth policy' by Russia against Napoleon in 1812, and the USA's use of defoliation substances such as Agent Orange, as well as their experimentation with 'weather-modification' techniques during the Vietnam War, constitute more recent historical examples of 'ecocide' (Emerson, 1991: 40; Weisberg, 1970).

Category 7. Unintentional, Not Symbolic, Peacetime

The seventh category in this taxonomy consists of those acts of environmental destruction that are unintentional, not symbolic, and occur during times of peace.

This would include pollution that occurs due to nuclear meltdowns, oil spills, and other unexpected mishaps that cause severe environmental degradation. Examples would include the Chernobyl nuclear calamity, the *Exxon Valdez* oil spill in Alaska, and the chemical spill in Bhopal, India.

More debatable would be the inclusion of pollution resulting from industrial processes, and all forms of human activity that inadvertently degrade the environment. While all forms of human activity alter the natural environment, this would include large-scale environmental degradation such as wholesale clearcutting of virgin forests, non-accidental discharging of oil into waters, and other grossly 'unsustainable' economic activity.

Category 8. Unintentional, Not Symbolic, Wartime

The final category consists of those acts of environmental destruction that are unintentional, not symbolic, and occur during times of war.

This category would include the collateral effects of war. While it may be argued that all use of weapons during warfare has foreseeable ecological consequences (i.e. all use of weapons would be 'deliberate' destruction of the environment), there are clearly cases where the ecological disruption is in fact unpredictable. Just as the destruction of the ozone layer by CFCs could not be forecast twenty years ago, similar situations could arise with respect to the use of weapons.

Environmental Destruction as Terrorism and 'Environmental Terrorism'

When the taxonomy of environmental destruction is applied to the definition of terrorism given above, it becomes evident that certain types of environmental destruction can be considered 'terrorism', 'environmental terrorism', or neither.

Acts of environmental destruction that fall under Category 7 (unintentional, non-symbolic, peacetime) and Category 8 (unintentional, non-symbolic, wartime) cannot be labeled terrorism because all terrorist acts are symbolic (and hence deliberate as well). The lack of symbolism further eliminates those acts or threats of environmental destruction that fall under Category 5 (deliberate, not symbolic, peacetime) and Category 6 (deliberate, not symbolic, wartime).

The only types of acts or threats of environmental destruction that can be

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legitimately considered terrorism are those that fall under Categories 1–4, providing that the act or threat falls outside of the national and/or international peacetime or wartime laws that govern the disruption of the environment. Hussein's actions in the Gulf War could therefore be labeled 'terrorism'.

The term, 'environmental terrorism', however, can be applied only to those acts or threats of environmental destruction that fall under Category 1 and Category 2, because it is only with these acts or threats that the environment is used as a means of creating fear over the ecological consequences of the act (i.e. the act is one of 'primary symbolism' and the environment is a *victim* rather than a *casualty*). Thus, while Hussein's environmental destruction in the Gulf War could be labeled 'terrorism', it could not be considered 'environmental terrorism'. Conversely, the threatening, maiming, and killing of rare turtle species in the Galapagos Islands incident, described above, could legitimately be labeled 'environmental terrorism'.

Conclusion: Use and Misuse of the Term 'Environmental Terrorism'

The study of 'environmental terrorism' is legitimized by its focus on one particular aspect of conventional terrorism – the environment as a target of terrorist actions.

Acts of environmental destruction may be considered terrorism, depending on: (1) whether the environmental destruction breaches national and/or international peacetime or wartime laws; (2) the type of environmental destruction; and (3) the definition of terrorism employed. More comprehensive definitions of terrorism, such as the definitions provided above, which often stress the symbolic nature of the act, eliminate those acts of environmental destruction that fall under Categories 5–8 in the above taxonomy. Consequently, these acts cannot be considered 'environmental terrorism'.

Gushchin (1985) contends that Union Carbide, the American company responsible for the Bhopal chemical disaster, was guilty of 'ecological terrorism'. Similarly, the current US government has made the claim that accidents and disasters that damage the ecology could qualify as 'environmental terrorism'.[16] These acts of environmental destruction would fall under Category 7 in the taxonomy above. Clearly, this demonstrates the need for a more lucid definition of the concept.

Acts or threats of environmental destruction that fall under Categories 3 and 4 are symbolic. Consequently, these types of acts or threats would be considered terrorism, given the definition of terrorism above. But because the environmental destruction in these cases is of 'secondary symbolism' – the environment is a *casualty* rather than a *victim* – these acts or threats should not be considered 'environmental terrorism'.

Doing so, in fact, entails a pertinent danger – abuse of the concept of 'environmental terrorism' for rhetorical purposes. When the Bush Administration declared that Saddam Hussein was guilty of 'environmental terrorism', they were using (some might say abusing) the potency of the term 'terrorism' for political posturing. Moreover, by using this rhetoric, Bush was able to sidestep the USA's obligation of accusing Iraq of perpetrating a war crime. Unfortunately, the Bush Administration's elocution has taken root in North American politics. The Clinton Administration's Deputy Under Secretary of Defense for Environmental Security has identified Hussein's actions as a

[16] This remark was made by Sherri Wasserman, Deputy Under Secretary of Defense for Environmental Security. This statement can be found at <http://128.174.5.51/denix/Public/ES-Programs/Speeches/speech-12.html>, viewed 4 June 1997.

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portentous indication of future 'environmental terrorism'. The Clinton Administration, then, has positioned itself to employ the term 'environmental terrorist' in the same inflammatory fashion as the Bush Administration in 1991.

Acts or threats of environmental destruction that fall under Categories 1 and 2, and that breach national and/or international laws governing the disruption of the environment during peacetime or wartime, are the only types of acts or threats that can legitimately be labeled 'environmental terrorism', because it is only in these scenarios that a perpetrator attempts to instill fear in the larger population over the ecological consequences of their destruction. In these cases, the environment is the primary symbol and the ecology is a *victim* rather than a *casualty*.

While the world has not witnessed many instances of environmental destruction that are of 'primary symbolism', the Galapagos Islands incident described above and the increasing prominence of ecological concerns suggest that this scenario should not be dismissed lightly. Indeed, residents of the Galapagos Islands – frustrated by what they perceive to be overzealous protection of the region's ecology and a perfidious lack of attention by the government to the economic plight of the Island's human residents – have threatened further acts of 'environmental terrorism'.[17] Future potential acts of 'environmental terrorism' are by no means limited to the Galapagos Islands. The Terrorism Research Center points out that the forests of the American Northwest, because of their aesthetic and ecological value, would make a prime target for terrorists wishing to influence a large segment of the American population.[18] Similar targets could certainly be identified world-wide.

Two caveats, however, need to be addressed. First, distinguishing 'environmental terrorism' from the more conventional breed of terrorism has implications for the human victims of 'environmental terrorism'. Consider an act of environmental destruction that destroys the environment while simultaneously leading to the loss of human life. The environment under these acts of destruction does indeed suffer. The environment, however, may not be the only object of suffering. To label this act 'environmental terrorism' might serve to elevate ecological concerns over concerns of human life. Although the ecological destruction might ultimately threaten human life, there is a danger in elevating the importance of this eventuality over the immediate loss of human life. Second, the ecological damage may not be any worse when the environment is a *victim* (primary symbolism) than when the environment is a *casualty* (secondary symbolism).

These concerns notwithstanding, the prominence of the environment as the symbolic victim in acts that fall under Categories 1 and 2 legitimizes the term 'environmental terrorism'. It is the symbolic nature of terrorism which most fundamentally distinguishes this breed of violence from others. Consequently, when the environment is symbolically disrupted or threatened, it is pertinent to use the term 'environmental terrorism'. Future discourse on the connection between the environment and terrorism is needed, so that policy-makers can better turn their attention to mitigating the social, economic, and political conditions that might foster this variety of terrorism.

[17] This information comes from two web sites: <http://gurukul.ucc.american.edu/ted/seacuke.htm>, viewed 2 June 1997; and <http://www.lonelyplanet.com/dest/sam/rc_ecu.htm>, viewed 2 June 1997.

[18] The Terrorism Research Center, 'Terrorism in the Future' at <http://www.terrorism.com/terrorism/bpart6.html>, viewed 2 June 1997.

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